Who am I?

Instructions

You will begin this activity by taking measurements of yourself and your classmates. Record the data in a table and then display the data in a histogram. From this you can decide how you compare to your class. You can also compare yourself and your class to students from across Australia by taking a data sample from CensusAtSchool.

Task One: Collect data about yourself and your class

1. Take the four measurements for yourself and record them in a table like the one below. Answer to the nearest half centimetre.

Measurements for students in my class

Student*	Height (cm)	Arm Span (cm)	Belly Button (cm)	Right Foot (cm)
Me				
Jack				
Jill				
Angelo				
Tri				
.....etc.				

* You could identify students as Student1, Student2, Student3 etc. instead of using actual names

2. Add the measurements for your classmates to the table.

Task Two: Analyse the data using summary statistics

3. Represent the height of the class by finding the mean for the Height column. Median and mode could also be used to represent the class.

Class Height Mean _____

Median _____

Mode _____

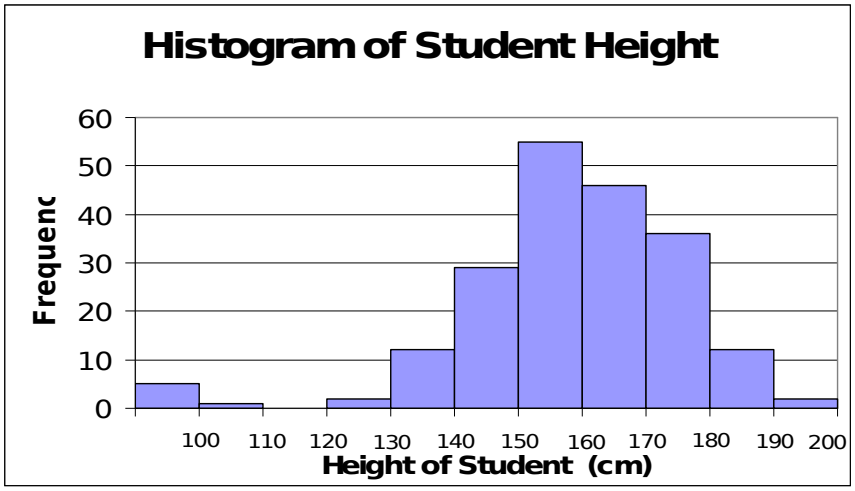
(It will be easy to do if you put your data into an Excel spreadsheet and use Insert Function to find these values)

4. Look carefully at your analysis. Which one of mean, mode or median best represents your class? You might use more than one.

5. State how you compare to your class.
E.g. How are you similar or different?
When you compare data you need to ask:
In which measures are you similar to your class?
In which measures are you different to your class?

Task Three: Display your data in a histogram

Graphs provide a visual representation of the data that can give a quick impression of the distribution. Grouped numerical data is best represented in a histogram. An example of a histogram is shown below: Note there are no gaps between the columns and the interval labels for the groups are at each edge of the column.



Note: This histogram is constructed for a sample of 200 Australian students taken from the 2008 CensusAtSchool Random

It is necessary to construct a table like this prior to drawing the histogram:

Interval	Tally	Frequency
0 -	𝍸	*5*
100 -	*I*	*1*
110 -		*0*
120 -	*II*	*2*
130 -	𝍸 𝍸 *II*	*12*
140 -	𝍸 𝍸 𝍸 𝍸 𝍸 *IIII*	*29*
150 -	𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸	*55*
160 -	𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 *I*	*46*
170 -	𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 *I*	*36*
180 -	𝍸 𝍸 *II*	*12*
190 -	*II*	*2*

6. Construct a frequency table then draw a histogram to represent the data in the Height column for your class. This is best done using the Statistical Tools Add-in for Excel which will construct the table and histogram for you. If you don't have this Add-in on your version of Excel you will need to construct the table and draw the histogram by hand. Use a coloured line to indicate your own value in both the table and the chart.

7. What does the histogram tell you that the mean, mode and median don't tell you about how you compare to your class?

8. Repeat the steps above for the arm span, the belly button height and the right foot length.

Task Four: Comment on your results

9. Prepare a written summary that describes your class. Include each of the four measures and any findings you gain from your summary statistics and the histograms. Use this to describe a typical student in your class.

10. Are you a typical student for your class? If not how close to being typical are you?

Extension: How do you compare to Australian students?

This is the final part of your investigation in which you conduct a similar analysis on your sample of Australian students. This will enable you to describe Australian students from the Australian CensusAtSchool Project and see how you and your class compare.

11. Go to http://www.abs.gov.au/censusatschool, click on the Random Sampler link to get a sample of 100 Australian students of your year. You could take a sample for a particular state/territory, if you prefer.

Questions 13 to 16 will provide the data for the measurements you are investigating. Copy and paste only these 4 columns into a new worksheet.

12. Prepare a summary that describes your sample of Australian students. What does a typical Australian student look like?

13. How do you compare to a typical Australian student from the Australian CensusAtSchool Project?

14. How does a typical student for your class compare to a typical Australian student from the Australian CensusAtSchool Project?

15. Write a statement to explain any similarities and differences. (I.e. Why might there be height differences displayed in people from different parts of Australia? You could consider age, culture and gender)